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SECRETARY, BOARD OF OIL, GAS & MINING

## BEFORE THE BOARD OF OIL, GAS & MINING DEPARTMENT OF NATURAL RESOURCES STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR AGENCY ACTION OF LIVING RIVERS FOR AN ORDER VACATING THE DIVISION'S DECISION APPROVING THE PERMIT APPLICATION OF RED LEAF RESOURCES, INC., FOR THE SOUTHWEST #1 MINE, LOCATED IN SECTIONS 19, 20, 29, AND 30, TOWNSHIP 13 SOUTH, RANGE 23 EAST, SLBM, AND SECTIONS 25 AND 36, TOWNSHIP 13 SOUTH, RANGE 22 EAST, SLBM, UINTAH COUNTY, UTAH.

RESPONSE OF
THE UTAH DIVISION OF OIL, GAS &
MINING
TO
REQUEST FOR AGENCY ACTION

Docket No. 2012 - 17

Cause No. M/043/0103

Pursuant to Utah Admin. Code R641-104-141 (2012) Respondent Utah Division of Oil, Gas and Mining (Division) respectfully submits this Response to Living Rivers' (Living Rivers or Petitioner) Request for Agency Action (Request) challenging the Division's final conditional approval of Red Leaf Resources' (Red Leaf) Notice of Intention to Commence Large Mining Operations for oil shale on the Tavaputs Plateau as follows.

#### I. JURISDICTION AND STANDING

The Division believes that the Board of Oil, Gas and Mining (Board) has authority to hear this appeal de novo pursuant to Utah Code Ann. § 40-8-6 (2012) and Utah Admin. Code R647-5-106(17) (2012). The Board does not have jurisdiction to grant Petitioner a remedy for any actions of another administrative Board or agency, like the Utah Division of Water Quality

(DWQ). This matter is to be heard in accordance with the rules and practices of the Board found at Utah Admin. Code R641-100 et seq. (2012).

Pursuant to its authority to enforce and approve a Notice of Intention under the Utah Mined Land and Reclamation Act's Large Mining Rules, the Division is a party to this matter.

(Utah Code Ann. § 40-8-7 (2012); Utah Admin. Code R647-4-100 et seq.(2012)).

The Division admits Living Rivers has standing to bring its Request as a party to the Informal Hearing held before the Division. (Utah Admin. Code R647-5-106(17) (2012)). Petitioner's Legal Authority, Jurisdiction and Standing statement incorrectly states the application at issue as the Earth Energy application. The correct permit in this matter is the Red Leaf Resources Notice of Intention to Commence Large Mine Operation for the Southwest #1 Mine M/047/0103 (NOI). Similarly, Petitioner's cited jurisdiction, Utah Code Ann. § 40-10-14(3), governs appeals of coal permit approvals and is inapplicable to this review of a permit issued under the Utah Mined Land Reclamation Act's Large Mining Rules. (Utah Code Ann. § 40-8 et seq.(2012); Utah Admin. Code R647-4-100 et seq.(2012)).

### II. STATEMENT OF FACTS

Red Leaf is a privately held company engaged in the development of its in-situ EcoShale<sup>TM</sup>
In-Capsule Technology (capsule) to process and remove bitumen from the naturally occurring oil shale deposits in the Mahogany formation of the geologic Douglas Creek Member.

Red Leaf holds School Institutional Trust Lands Administration Mineral Leases 50150 and 43374 on the Tavaputs Plateau to conduct mining.

Petitioner's asserts Red Leaf's leases are in Indian Country divesting state agencies of control over the implementation and enforcement of the Clean Air Act, Clean Water Act, Safe Drinking Water Act, and the Resource Conservation and Recovery Act and vesting jurisdiction over these acts with the Federal Environmental Protection Agency (EPA). (Request at 7). Petitioner has not provided documentation for this assertion. As there is no cooperative federal counterpart to the Utah Mined Land Reclamation Act for the federal government to assert jurisdiction over, the Division maintains it is the sole regulatory agency authorized to regulate mining in the proposed area.

Prior to submitting the NOI, Red Leaf held a five-acre exploratory permit that was later converted to a five-acre Small Mining Operation S/047/0102. At the small mine facility Red Leaf constructed a pilot capsule approximately one-acre in size.

To process the oil shale Red Leaf intends to use its in-situ EcoShale<sup>™</sup> capsule technology.

The Division concurs with Red Leaf's description of the capsule technology found in Petitioner's Statement of Facts. (Request at 7).

On April 28, 2011 Red Leaf submitted their NOI to the Division to expand its current small mine operation. The proposed mine will replicate the technology used in the pilot capsule on a commercial scale. This commercial scale mine will consist of 118 capsules, each measuring 900 feet long, 500 feet wide, and 136 feet tall. The total acreage to be disturbed is estimated to be 1477 acres.

Page thirty-three of the initial NOI included the statement, "The Division of Water Quality (DWQ) is satisfied that Red Leaf's project does not impact water based on our predesign conference review. A formal statement from DWQ is pending and will be provided as Appendix N to this document when available."

Upon review of the initial application the Division determined the NOI was incomplete and requested further information from Rcd Leaf. Between early September and mid-October 2011 Red Leaf provided and the Division accepted the requested information.

In addition to the Division's general request for more information, during this time the Division also communicated with Red Leaf regarding Red Leaf's communications with DWQ and the necessity for a ground water discharge permit. On October 6, 2011 Rob Herbert of DWQ sent a letter to Bob Bayer of JBR Environmental Consultants stating that DWQ had determined

Red Leaf would need to submit a complete ground water discharge permit application (GWPA) for the Southwest Mine #1. Reflecting DWQ's request for a GWPA, the language on page thirty-three of the original NOI, now renumbered page forty-two, was adjusted to reflect communications with DWQ.

After reviewing the resubmittal of the information on October 20, 2011 the Division sent Red Leaf a Tentative Approval of the NOI conditioned on receiving a ground water discharge permit from DWQ.

On December 21, 2011 JBR Environmental Consulting, on behalf of Red Leaf, submitted to DOGM the entirety of its Utah Ground Water Discharge Permit Application submitted to DWQ. The Division added the GWPA as Appendix S to the NOI on January 11, 2012. On February 10, 2012 Rob Herbert, P.G. Manager for Utah Division of Water Quality Ground Water Protection Section, requested additional information from Red Leaf to complete DWQ's review of Red Leaf's GWPA.

### III. PROCEDURAL HISTORY

On October 20, 2011 the Division published public notice of the Division's Tentative Approval of Red Leaf's NOI. That same day the Division sent a letter to James Patten of Red Leaf notifying Red Leaf of the Division's Conditional Tentative Approval and gave notice that the permit required Red Leaf to comply with Condition 1, which states: "Thirty days (30) prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Utah Division of Water Quality (DWQ), or a letter saying a permit is not required."

On November 18, 2011 Living Rivers timely submitted a Protest to the published Tentative Approval. Living Rivers' Protest identified four areas of concern: 1) the NOI failed to adequately

account for the possible existence of susceptible groundwater resources in the area of the mine; 2) the NOI failed to account for the possible impacts to ground water in the area of the mine; 3) there is no evidence that Red Leaf intends to obtain or that DOGM intends to require a groundwater permit from the Division of Water Quality ("DWQ"), as required by DWQ regulations; and 4) the NOI fails to provide adequate information to show that the design of the EnShale (sic) capsules will be sufficient to prevent leakage of petrochemicals into the area surrounding the mine, and specifically into local perched groundwater aquifers.

The Division determined Living Rivers' comments constituted "written objections of substance." Pursuant to Utah Code Ann. § 40-8-13(6)(d)(iii) on February 9, 2012 the Division gave notice to Living Rivers, Redleaf, and Jennifer Spinti of the Institute for Clean and Secure Energy, that a Formal Adjudicative proceeding on the matter was to be held before the Division on February 23, 2012 at 9:00 a.m. at the Utah Department of Natural Resources building in Salt Lake City, Utah. At the commencement of the proceeding, deeming it appropriate, in the public interest, and not unfairly prejudicial to the rights of any party, Hearing Officer John Baza converted the formal proceeding to an Informal Hearing. At the Informal Hearing Living Rivers was the only objecting party to appear. Living Rivers, Red Leaf, and the Division were allowed to present their arguments, statements of witnesses, and the record was left open for 10 days to allow Living Rivers to respond to a written position paper presented by Red Leaf at the hearing.

After reviewing the testimony, information submitted at or in response to the Informal Hearing, and the information in the file to date, on March 9, 2012 Hearing Officer Baza issued his Findings of Fact, Conclusions of Law, and Order for the Informal Hearing. The Informal Order held that:

1) The Tentative Conditional Approval approved on October 20, 2011 is now final.

- 2) Red Leaf Resources must still comply with Condition 1: "Thirty days (30) prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Utah Division of Water Quality (DWQ), or a letter saying a permit is not required."
- 3) DOGM reserves all enforcement and inspection rights under R647-6 et seq. to monitor the Southwest Mine #1 to ensure ground and surface waters are adequately protected if Red Leaf complies with Condition 1.

Pursuant to rights granted under Utah Admin. Code R647-5-106(17), as an aggrieved party to the Informal Hearing before the Division, on March 19, 2012 Living Rivers brought this Request for Agency Action. Living Rivers asks the Board to vacate the Division's approval of Red Leaf's permit application and enter an order denying approval of the permit application as inaccurate, incomplete, or both, or in the alternative vacate the approval decision and remand the matter to the Division to allow Red Leaf to correct the identified permit deficiencies.

#### IV. ARGUMENT

The NOI meets all of the relevant Large Mining Operation Rules and the Division has appropriately conditioned the permit on the receipt of a ground water discharge permit from DWQ. The Division is vested with inherent discretion of an administrative agency to determine reasonable methods of performance of their statutory duties. Finally, Petitioner fails to advise the Board what provision of law it believes was violated for certain the errors alleged in Part IV of its Request. The Division will respond to each of Petitioner's allegations in turn.

# A. THE NOI APPROVAL WAS PROPERLY CONDITIONED ON A REQUIREMENT THAT RED LEAF OBTAIN A DISCHARGE PERMIT, IF NECESSARY, FROM DWQ.

The Division denies Living Rivers' allegation that the Division improperly approved the NOI based on an unsupported assumption that Red Leaf's capsule would result in no impact to groundwater.

Red Leaf's initial NOI submitted on April 28, 2011 included the statement, "The Division of Water Quality (DWQ) is satisfied that Red Leaf's project does not impact water based on our pre-design conference review. A formal statement from DWQ is pending and will be provided as Appendix N to this document when available." (April 28, 2011 NOI at 33.) However, on October 6, 2011 DWQ sent a letter to Red Leaf stating DWQ had determined Red Leaf needed to submit a completed GWPA. Consequently, on October 7, 2011, thirteen days before the Division's approval of the NOI, Red Leaf submitted an amendment reflecting DWQ's request for a ground water discharge permit application. (NOI at 42).

On October 20, 2011 the Division sent a letter to Red Leaf conditioning Tentative

Approval of the NOI on Red Leaf complying with Condition 1: "thirty days (30) prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Division of Water Quality (DWQ), or a letter saying a permit is not required."

This letter was made publicly available on the Division's website no later than October 22, 2011.

Accordingly, as of the date of the tentative approval, the permit was conditional on Red Leaf obtaining a DWQ permit or confirmation that a permit was not required.

Subsequently, in furtherance of the obligation to pursue a DWQ permit, Red Leaf submitted to the Division the entirety of its GWPA previously submitted to DWQ on December 21, 2011. In February 2012 Red Leaf informed the Division that DWQ had requested additional

information. The GWPA and Red Leaf's communications with DWQ were made a part of the evaluation before the Hearing Officer at the time final approval granted on March 9, 2012.

Consequently, the final approval of the NOI by the Hearing Officer, and the NOI approval subject to review by the Board in this Request includes the Division's evaluation of the amended language of the NOI, and the inclusion of the GWPA. The Division correctly "factored DWQ's notification regarding the requirement to submit an application for a ground water permit into its decision." (Request at 11).<sup>2</sup>

# B. THE DIVISION PROPERLY DETERMINED THE NOI MET THE RELEVANT RULES TO IDENTIFY AND DESCRIBE GROUNDWATER RESOURCES.

Petitioner's claim that the NOI does not adequately identify and describe local groundwater resources.

Utah Admin. Code R647-4-106 states "[t]he operator shall provide a narrative description referencing maps or drawings as necessary, of the proposed operations including: . . . (8) depth to groundwater, extent of overburden material and geologic setting." (Utah Admin Code. R647-4-106(8) (2012)).

Pages thirty-seven to thirty-eight of the NOI, entitled 106.8: Depth to Groundwater, Extent of Overburden Material and Geologic Setting, include a narrative description of the groundwater in the area. The description identifies groundwater associated with the Mesa Verde Group as the uppermost aquifer of regional extent in the permit area. As indicated by the Division's own oil and gas files, the top of the Mesa Verde Formation is between 3000 - 4000 feet below ground surface. The NOI states that surface data from Price and Miller (1975) indicated the Parachute

<sup>&</sup>lt;sup>2</sup> Living Rivers' appears to the base their arbitrary and capricious argument on the claim that there is no evidence "in the record" the Division accounted for DWQ's ground water discharge permit application request. It is unclear what record Petitioner's are referring to. This Board appeal is a de novo review of the adequacy of Red Leaf Resources application for a Large Mine Operations. As discussed above, multiple places in the Division's file indicate that the Division adjusted the NOI and approval of the NOI to take into account DWQ's request. Moreover, as the appeal before the Board is a de novo review the record before the Board is inclusive of testimony, expert reports, and other documents gathered at the date of the Board hearing.

Creek and Douglas Creek Members, formations within the project area that lie above the Mesa Verde Group, are key aquifers in the area.

Red Leaf's narrative addressed this information in three ways: 1) demonstrating there are no USGS-mapped springs issuing from either of these members in or near the parcels; 2) exploration drilling by Red Leaf did not encounter ground water; and 3) records of nearby water wells from the Utah Division of Water Rights indicate varying low amounts of ground water present.

First, at the Informal Conference, Leslie Heppler, Division Mining Engineer III, testified she "double-checked" USGS Report Number 549DM"and the NOI's narrative description to conclude Red Leaf's NOI met the requirements of R647-4-106.8 and properly demonstrated an absence of seeps and springs. (Transcript at 50.) Similarly, Tom Munson, Surface Water Hydrologist, testified that Utah Admin. Code R647-4-105.1.12, "Maps, Drawings, and Photographs – perennial streams, springs and other bodies of water . . . within 500 feet of proposed mining operations" does not include any specific methodology explaining how an operator must identify springs. (Transcript at 51.) Mr. Munson determined that that Red Leaf's inclusion of USGS maps of seeps and springs was an acceptable means of meeting the relevant requirements of Utah Admin. Code R647-4-106.8. (Transcript at 50.)

There is no requirement in the rules to require an applicant to "perform a thorough, systematic seep and spring inventory of the parcels and nearby area" as argued by Living Rivers in their Request. (Request at 13.)

Second, Petitioner contends water encountered in the RL-1 drilling unit and the lack of well logs indicates Red Leaf's exploratory drilling is not a sufficient basis to encounter possible groundwater sources in the Parachute Creek and Douglas Creek Members. However, testimony

and materials submitted at the Informal Hearing refuted these claims. Red Leaf's consultant Bob Bayer of JBR Environmental stated that while the top of the RL-1 drill hole did encounter some waters, they were local compartmentalized waters attributed to local fractures created by weathering and erosion and that "none of the drilling encountered water at depth, or any rock types, that suggested that they had sufficient permeability to host or contain groundwater." (Transcript at 47-48). Moreover, in the area of the mine "all of the Parachute Creek and Douglas Creek aquifer that could serve as significant recharge area have long been eroded away." (Transcript at 48).

Third, the NOI accounted for possible water in the Douglas Creek and Parachute Creek Members by including a summary of water well files from the Utah Division of Water Rights.

These wells indicated two deep isolated perched aquifers, a lack of water, or very little water present in the area. These water well files are publicly viewable on the Utah Division of Water Rights website. (GWPA at 21). The Hearing Officer considered the above materials and determined Red Leaf adequately identified and described local groundwater resources meeting the requirements of Utah Admin. Code R647-4-106(8) and final conditional approval of the NOI was appropriate.

## C. THE DIVISION PROPERLY DETERMINED THE NOI ACCOUNTED FOR POTENTIAL IMPACTS TO GROUNDWATER RESOURCES

The Division denies Petitioner's allegation that the Division violated its regulations by failing to require Red Leaf to account for the potential impacts of mining operations on local groundwater resources.

Utah Admin. Code R647-4-109 requires an operator to provide a general narrative description identifying potential surface and/or subsurface impacts including projected impacts

to surface and groundwater systems and actions which are proposed to mitigate any referenced impacts.

Red Leaf accounted for surface waters by stating in the NOI that surface waters are generally not present being ephemeral/intermittent and that rainfall is generally low. (NOI at 40-41). Regardless, the NOI describes how Red Leaf intends to use best management and reclamation practices to mitigate any impacts to surface water if present. These practices include, among others: installing, prior to earth disturbing activities, water diversions, sumps, ponds designed to account for a 100-year 24 hour storm event, and perimeter ponds and ditches for runoff control. The NOI also includes Appendix E, a Drainage Control Plan. (NOI at 41).

In terms of impacts to groundwater, both the NOI and testimony at the Informal Hearing indicate groundwater is not susceptible to any impacts from the mining and retorting operations because it is isolated from those operations by several hundred feet of low permeability marlstones. (NOI at 42; Transcript at 53). Petitioner contests this claim by citing to statements in the NOI that the first porous units occur approximately 50-100 feet below the Mahogany in the Douglas Creek Member. (NOI at 42). However, the NOI accounts for this information by stating that vertical permeability throughout the formation is restricted to jointing, which is infrequent. (NOI at 42).

Petitioner also claims the NOI rests on the assumption that the Red Leaf's capsule is self-contained and will not leech into ground water resources. This argument is similar to that posed in Petitioner's Argument A, *supra*. Petitioner focuses on the possibility of seepage out of the capsule by pointing to tests performed for the DWQ GWPA regarding seepage through the upper Bentonite Amended Soil (BAS) layer of the capsule and DWQ's request for additional information regarding leeching out of the bottom BAS. (Request at 17).

The Division has accounted for these potential leeching impacts by conditioning approval of the NOI on receipt of a ground water discharge permit. Under the Utah Water Quality Act, "it is unlawful for any person to discharge a pollutant into waters of the state or to cause pollution which constitutes a menace to public health and welfare, or is harmful to wildlife, fish or aquatic life, or impairs domestic, agricultural, industrial, recreational, or other beneficial uses of water, or to place or cause to be placed any wastes in a location where there is probable cause to believe it will cause pollution." (Utah Code Ann. § 19-5-107(1)(2012)). Consequently, as the agency charged with enforcing water quality, DWQ will determine whether or not seepage from the BAS will "cause" menacing or harmful pollution or impair beneficial uses of waters of the state. If DWQ finds the project fitting for a permit, it will issue a permit with any conditions necessary to assure no harmful or menacing pollution or impairment occurs. The Division requires Red Leaf to comply with any DWQ permit conditions because applicants must comply "with the applicable statutes, rules, regulations, and ordinances of all . . . agencies with jurisdiction over any aspect of the operator's mining operations including . . . the Utah Department of Environmental Quality." (Utah Admin. Code R647-1-102(3)(2012)). If DWQ finds the project will impermissibly affect water quality, it will not issue a discharge permit. Under Condition 1 mining cannot occur without a groundwater discharge permit or a statement that one is not needed. Consequently, the Division has required Red Leaf account for impacts to ground water from capsule construction by requiring the ground water discharge permit.

# D. NOI CONTAINS SUFFICIENT EVIDENCE THAT THE ECOSHALE CAPSULE IS ADEQUATELY DESIGNED TO PREVENT CONTAMINATION OF LOCAL GROUNDWATER RESOURCES.

Petitioner claims that the NOI contains insufficient information about the design of the capsule, and does not "meet the requirements of an NOI and/or reclamation." (Request at 19).

However, in this section of the Request the Petitioner fails to cite any specific section of the applicable rules or statutes that the Division has violated. The claims are based simply on alleged standards the Petitioner has invented without any applicable authority. To make this claim, Petitioner cites nine reasons the NOI is inadequate: essentially a catch-all argument that repeats many of the claims raised in its previous three arguments. Each claim will be addressed briefly in turn.

First, Subsequent Information and Analysis. This is a repeat of the argument addressed in part IV.A, supra.

Second, Inadequate Information and Analysis. This argument essentially attacks the use of the prototype project as an adequate means of evaluating the NOI. Such an engineering analysis is subject to the expertise of the Division. Petitioner's critique asks questions that are not required by the rules governing the review and approval of an NOI. Such questioning goes to the reasonableness of the Division's determination and is not required by the rules to be contained in the NOI. Any technical evaluation is subject to additional questions about the foundation for the conclusions. The rules do not require the Division to verify the science of the NOI but to determine that the conclusions are reasonable and supported by the facts. Here the Division had the benefit of the years of prototype testing to support the conclusions. This is adequate information and analysis to support the NOI.

Third, Leakage and Failure. This is a repeat of the argument addressed in IV.C, supra.

Fourth, Lack of Real Data on Untested Technology. This argument is based on an invented standard. There is no requirement to approve a mining plan to it must be based on actual implementation of the proposed technology. Petitioner's references or comparisons to

other companies' oil shale or sands processing is irrelevant as the specifics of those technologies are not before the Board.

Fifth, Faulty Assumptions. The Division directs the Board to Argument A to demonstrate that the Division accounted for requirement Red Leaf submit a GWPA and deny the allegation that the NOI was approved on the assumption that the capsule is impermeable and will remain intact.

Sixth, No Risk Assessment. Petitioner cites to no provision in the Large Mining rules requiring the application to include a Failure Modes and Effects Analysis or similar risk analysis associated with the mine. Here Petitioner is attempting to impose additional requirements that are not provided for by rule or statute.

Seventh, No Plan. Petitioner cites to no provision in the Large Mining rules requiring the Division require an applicant submit an adaptive management plan to address possible future water resource issues. Petitioner is attempting to impose additional requirements that are not provided for by rule or statute. Additionally, the Division must follow all permit renewal, enforcement, and bond adjustment rules which will account for changing circumstances and violations on the ground. The rules require Red Leaf to satisfy the performance standards for operations and reclamation throughout the life of the mine. As a result, the Division will be able to impose additional requirements, if the need arises, to meet the performance standards which include protection of surface and ground waters and prevention of effects of deleterious materials on the environment.

Eighth, No Monitoring. Again the Petitioner seeks to have the Division require the NOI contain provisions that are not required by the rules. Petitioner cites no provision in the Large Mining rules requiring the Division require monitoring wells. As noted above, the Division has

authority to require monitoring wells and other provisions if determined necessary to meet the performance standards.

Ninth, Settling, Heating, and Other Forces. This "reason" is repetitious of the reasons cited elsewhere. Petitioner cites to no provision in the Large Mining rules requiring the Division include this requested analysis for settling, heating, and other forces.

### V. PRAYER FOR RELIEF

The Division asks that the Board uphold the Division's decision to conditionally approve Red Leaf's NOI to commence oil shale mining and processing on the Tavaputs Plateau. The Division has shown for each of the alleged deficiencies the NOI satisfies all of the requirements of the Utah Mined Land Reclamation Act. The Board should defer to the Division's expertise and experience in administering this technical law, which requires the Division to use discretion in making complex decisions. The Division has appropriately applied this discretion to approve the Red Leaf NOI. Moreover, conditioning the approval of the NOI on the receipt of a groundwater discharge permit further accounts for any potential impacts to local groundwaters.

If the Board finds information from the DWQ's GWPA may be necessary prior to a final approval of the NOI, the Division asks the Board's decision on the permit be stayed until the decision by DWQ is concluded and any additional findings associated with that decision are reviewed for compliance with the Utah Mined Land Reclamation Act.

Respectfully submitted this 17th day of April 2012.

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